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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,346	03/31/2004	Scott Sibbett		8293

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WASHINGTON, DC 20005-1714

EXAMINER
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FICK, ANTHONY D

ART UNIT	PAPER NUMBER
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1753

MAIL DATE	DELIVERY MODE
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06/11/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/815,346

Applicant(s)

SIBBETT ET AL.

Examiner

Anthony Fick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 13, 2007 has been entered.

### ***Remarks***

2. Applicant's amendments to the claims have overcome the previous rejections under 35 U.S.C. 112 second paragraph. The rejections are therefore withdrawn.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Bohn et al. (U.S.P.G.Pub 2003/0136679).

Bohn discloses a microfluidic device as shown in figures 1, 4, 7, 8 and 9.

Regarding claim 1, Bohn shows in figures 7, 8 and 9 (inset of figure 7c) a body comprising a first fluid passage, passage on electrophoresis wafer in figure 8, the black passage in figure 7, a second fluid passage, auxiliary flow passages shown in figure 9, the white passage in figure 7, and a membrane positioned separating the passages and in communication with the passages, cavity membranes in figure 8, the white rectangle in figure 7. Bohn shows the junction of figure 7 in greater detail in figures 1 and 4. Bohn further discloses placing electrodes within the passages to create voltages (figures 7 through 9) and pass electrons from the first passage to the second passage through the membrane (figure 4). Figure 1 further shows the fluid passages intersecting where the membrane is positioned separating the fluid passages as well as a three level structure with the first passage and second passage separated by the membrane. The devices in figures 7, 8, and 9 also show one or more first reservoirs in the first passage (reservoirs in 8, circles in 7), the electrode placed within one of the reservoirs (see figure 9).

Regarding claim 2, Bohn discloses using PDMS to make the channels (paragraph 0025).

Regarding claim 6, figures 7, 8 and 9 also show reservoirs in the second channel and a second electrode within one of the reservoirs (see figure 9).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohn as applied to claims 1, 2 and 6 above, and further in view of Ruiz-Martinez et al. (U.S. 6,554,985).

The disclosure of Bohn is as stated above for claims 1, 2 and 6.

The difference between Bohn and claim 3 is the requirement of an agarose gel membrane.

Ruiz-Martinez teaches a method for separation of biological molecules. The separation medium is a sieving matrix of polyacrylamide, polymer solutions, or agarose (column 1, paragraph 3).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the agarose of Ruiz-Martinez as the membrane of the device of Bohn because agarose has use as a sieving medium (Ruiz-Martinez column 1, paragraph 3) and Bohn states that the membrane may be made of other porous materials (Bohn paragraph 0026). Because Bohn and Ruiz-Martinez are both concerned with material manipulations, one would have a reasonable expectation of success from the combination. Thus the combination meets claim 3.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohn as applied to claims 1, 2 and 6 above, and further in view of Olivares et al. (U.S. 6,942,773).

The disclosure of Bohn is as stated above for claims 1, 2 and 6.

The difference between Bohn and claim 4 is the requirement of a membrane made of cellulose.

Olivares teaches a separation device to detect particles. The separation channel utilizes a sieving medium such as polyethylene glycol, polyacrylamide, hydroxyl propyl methyl cellulose or hydroxyethylcellulose (column 2, paragraph 7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the cellulose of Olivares as the membrane of the device of Bohn because cellulose has use as a sieving medium (Olivares column 2, paragraph 7) and Bohn states that the membrane may be made of other porous materials (Bohn paragraph 0026). Because Olivares and Bohn are both concerned with material manipulations, one would have a reasonable expectation of success from the combination. Thus the combination meets claim 4.

#### ***Response to Arguments***

8. Applicant's arguments filed April 13, 2007 have been fully considered but they are not persuasive. Applicant argues that the reference to Bohn does not anticipate the amended claim 1. The examiner respectfully disagrees. As stated above, Bohn discloses microfluidic devices with multiple passages intersecting via a membrane in a three level structure, and the passages contain fluid reservoirs with electrodes contained within (see figures 7, 8 and 9), thus meeting all the requirements of the claim. Therefore the rejection is maintained.

9. Applicant's arguments with respect to claims 3 and 4 have been considered but are moot in view of the new ground(s) of rejection.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Fick whose telephone number is (571) 272-6393. The examiner can normally be reached on Monday - Friday 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Fick *AOF*  
AU 1753  
June 6, 2007

  
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